

SHOCK ABSORBING BOAT

This invention relates to watercraft and more particularly to means of reducing forces transmitted to boat occupants from a boat hull travelling at high speeds and in rough waters.

BACKGROUND OF THE INVENTION

When fast moving small watercraft encounter even moderately disturbed water, the occupants are subjected to uncomfortable vibration and shock. US patent 5,465,679 issued 11/14/95 to Mardikian discloses shock-absorbing floorboards for a personal watercraft of the type operated in a standing position. US patent 4,901968 issued 2/20/90 to Ellis discloses a shock-absorbing seat for a Bass boat. US patent 5,367,978 issued 11/29/94 to Mardikian discloses a pivoted shock absorbing seat for boats. Certain small watercraft have a helmsman's seat with a control panel and aft seats for other occupants. It would be useful if these elements could all be arranged with means for reducing shock and vibration transmitted therefrom to all these occupants. Prior art shock absorbing features are generally pivoted at a forward boat element. Since forward elements moves more than aft elements, it would be advantageous to pivot such features at the rearmost element.

SUMMARY OF THE INVENTION

It is accordingly an object of the invention to provide a watercraft or an assembly for a watercraft that will reduce the shock and vibration of high speed travel that is transmitted to the occupants. It is another object that the assembly provide shock and vibration reduction to the seats and control console. It is yet another object that the assembly be pivotally connected to the watercraft at an aft element such as the transom. When a vessel is under way at high speeds, the transom is subjected to the least up and down motion, and the prow to the greatest motion. The assembly of the invention includes a horizontal base that is hingedly connected to the transom to pivot about a horizontal axis. Since the transom suffers the least motion, the axis will be most stable. The base is supported by spring bias means connected to the hull. Shock absorbers may also be connected to reduce the vibration of the base when the hull is moving at high speeds. Seats, console, and floor or foot rests may all be mounted on the base so that the occupants are shielded from the vibrations of the hull. These and other objects, features, and advantages of the invention will become more apparent when the detailed description is studied in conjunction

with the drawings in which like elements are designated by like reference characters in the various drawing figures.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a top plan view of a first embodiment of the invention.

Fig. 2 is a side elevation view, partially in section of the first embodiment, with a second position of the watercraft shown in phantom.

Fig. 3 is a top plan view of a second embodiment of the invention.

Fig. 4 is a side elevation view, partially in section of the second embodiment, with a second position of the watercraft shown in phantom.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Referring now to the drawing Figs. 1 and 2, a center console watercraft 2 has a transom 3, and a hull bottom 4. An assembly 1 comprises a substantially horizontal base 5 pivotally connected to the transom 3 by hinge connection 6 so as to pivot about a substantially horizontal axis 15. Mounted on the base 5 are a helm or steering apparatus 11, and controls 12 in a center console 13. A wide seat 9 that accommodates the helmsman or operator 14 with enough seating space for another passenger (not shown), and footrest 16 are also mounted on the base. A spring 7 and shock absorber 8 both have a first end connected to the base 5 and a second end connected to the hull bottom 4.

As shown in phantom in Fig. 2, when the hull bow 17 is lifted by a wave, the base 5 and the items supported thereon tend to remain horizontal, because the base is pivoting on the axis 15 attached to the transom 3, which moves much less than the bow. The spring 7 and shock absorber 8 cushion and absorb much of the motion and vibration that would otherwise be transmitted to the occupants.

Referring now to the drawing Figs. 3 and 4, a flats type watercraft 2' has a transom 3', and a hull bottom 4'. An assembly 1' comprises a substantially horizontal base 5' pivotally connected to the transom 3' by hinge connection 6' so as to pivot about a substantially horizontal axis 15'. Mounted on the base 5' are a helm or steering apparatus 11', and controls 12' in a center console 13'. A wide seat 9' that accommodates the helmsman or operator 14 with enough seating space for another passenger (not shown), a forward seat 19 and floor 18 are also mounted on the base. A combined spring and shock absorber assembly 20 has a first end connected to the

base 5' and a second end connected to the hull bottom 4'. It is common for an operator to stand while operating this type of boat. By insulating the floor from vibration, the standing operator is protected from much of the discomfort that is usually experienced.

While I have shown and described the preferred embodiments of my invention, it will be understood that the invention may be embodied otherwise than as herein specifically illustrated or described, and that certain changes in form and arrangement of parts and the specific manner of practicing the invention may be made within the underlying idea or principles of the invention.